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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/675,096	09/28/2000	Hsin-Chu Tsai	042390.P8829	9115

7590

11/05/2003

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EXAMINER

MONESTIME, MACKLY

ART UNIT	PAPER NUMBER
2676	13

DATE MAILED: 11/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/675,096

Applicant(s)

TSAI ET AL.

Examiner

Mackly Monestime

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) ____ is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

1. Claims 1-24 are presented for examination.

Claim Rejections - 35 U.S.C. § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4, 6-8, 11-12, 14-16 and 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilde (US Patent No. 5,828,382) in view of Cosman (US Patent No. 5,651,104).

4. Cosman was cited in the last office action.

5. As per claims 1-2, 11 and 20-21, Wilde substantially disclosed the invention as claimed, including a computer system comprising: a central processor unit to execute non-graphics instructions (Fig. 1, Item No. 110) a graphics core (Fig. 1, Item No. 150); and a unified graphics cache coupled to the graphics core (Fig. 1, Item No. 115); wherein the unified graphics cache stores texture data, color data and depth data (col. 3, lines 5-7; col. 4, lines 27-28).

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Wilde did not explicitly disclose a graphics core to compute graphical transformations via supersampling techniques, but Wilde did disclose the use of a graphics unit being able to render texture information representative of graphics primitives (Fig. 1, Item No. 150; col. 4, lines 20-24). However, Cosman disclosed a computer graphics system and process for adaptive supersampling in which a graphics processor is used to compute graphical transformation via supersampling (col. 9, lines 26-48). Therefore, taking the combined teachings of Cosman and Wilde as a whole, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the cited references because doing so would not only provide greater texture detail when displaying polygons defined at oblique angles; but also provide an improved computer graphics system that can display oblique texture mapped polygon with minimal aliasing and minimal loss of detail without exceedingly high processing loads.

6. As per claims 3 and 22, Wilde disclosed a central processing unit and a CPU cache coupled to the CPU core (Fig. 1, Items No. 110, 115).

7. As per claims 4 and 23, Wilde disclosed a bus interface coupled to the CPU cache and the graphics cache (Fig. 1, Item No. 120).

8. As per claims 5, 19 and 24, Wilde disclosed that the graphics core operates according to a tile based rendering architecture (col. 3, lines 11-26).

9. As per claim 6, Wilde disclosed a main memory coupled to the bus interface (Fig. 1, Item No. 124).



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10. As per claims 7-8, 12 and 14, Wilde disclosed that the graphics core amplifies polygons and renders the polygons into the graphics cache; and image polygons are implemented via viewport transformation (Fig. 2, Item No. 220; col. 5, lines 41-52).

11. As per claims 15-16, Wilde further disclosed that the process of rendering the polygons comprises: setting the image polygons and rasterizing pixels within the image polygons (col. 1, lines 6-9; col. 4, lines 21-24).

12. Claims 9, 13 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilde in view of Cosman as applied to claims 1, 11 and 20 above and further in view of Pfister et al (US Patent No. 6,448,968).

13. Pfister et al was cited in the last office action.

14. As per claims 9, 13 and 17, Wilde and Cosman did not disclose that the graphics core downsampling the image polygons after the polygons have been rendered. However, Pfister et al disclosed the use of a downsampling technique (col. 12, lines 2-10). Moreover, numerous downsampling methods are well known in the graphics art; for instance downsampling often refers to a sampling of the image data by a factor of two in both the horizontal and vertical directions. In addition, the downsampled pixel value of a block of pixels in an image may be the medium value of all pixels in that block, wherein the block size is four pixels, which is typical, the values of the pixels in the block may be added together and divided by four. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to

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have utilized the downsampling technique taught by Pfister et al into the system of Wilde and Cosman because doing so would enhance the quality of the resulting image.

15. Claims 10 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilde in view of Cosman and further of Pfister et al as applied to claims 1-9 and 11-17 above, further, further in of view of Li et al (US Patent No. 5,860,060).

16. Li et al was cited in the last office action.

17. As per claims 10 and 18, the combination did not disclose the downsampling of the image polygons are implemented by executing a bit aligned block transfer. However, the use of a bit aligned block transfer is well known in the graphics art. It can be evidenced in the reference by Li et al in which a bit blt hardware accelerator is used (col. 7, lines 19-20). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the cited references because doing so would provide high quality "antialiased" text and graphics without requiring the calculation of colors by the host processor.

Conclusion

Applicant is required to give full consideration to these prior art references when responding to this office action.

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The prior arts made of record and not relied upon is considered pertinent to applicant's disclosure.

Jones et al (US Patent No. 5,986,677) taught an accelerated graphics port read transaction merging.

Wada (US Patent No. 5,959,639) taught a computer graphics apparatus utilizing cache memory.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mackly Monestime whose telephone number is (703) 305-3855. The examiner can normally be reached on Monday to Thursday from 7:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella, can be reached on (703) 308-6829.

Any response to this action should be mailed to:

Commissioner of Patent and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, Va, Sixth Floor (Receptionist).

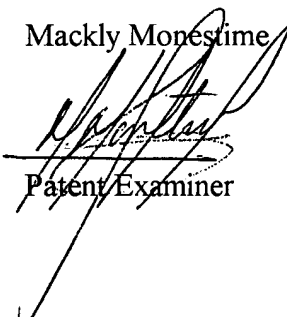
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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Mackly Monestime



Patent Examiner

October 28, 2003



MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600